



COUNTRY STATEMENT - U.S.A.

1. FISHERIES ADMINISTRATION

The National Marine Fisheries Service (NMFS) was reorganized in 1978 to accommodate and facilitate the expanding and changing national goals and directions of the U.S.A. in the area of fisheries and related matters. To ensure that marine mammals and endangered species and problems relating to the marine habitat receive sufficient attention, two separate offices, the Office of Marine Mammals and Endangered species and the Office of Habitat Protection were established within the NMFS headquarters hierarchy. The other offices administering NMFS programs are the Office of Utilization and Development, Office of Resource Conservation and Management, Office of International Fisheries Affairs, and Office of Science and Environment.

2. PLANNING

On the national level, NMFS activities related to resource statistics programs include the collection of data on fish landings, effort, processing, employment, foreign trade, as well as social and economic data. Because much of this information is obtained by public surveys, survey designs are needed to collect these data. In 1978 major efforts were focused on the development of a 5-year plan for the collection of social and economic data needed for fishery management.

3. MARINE RESOURCES

NMFS conducts a multidisciplinary biological and socioeconomic research program for the protection and rational use of living marine resources and also for the maintenance and enhancement of the aesthetic, economic, and recreational values of these resources. An important component of this research is the Marine Resources Monitoring, Assessment, and Prediction (MARMAP) program.

3.1 Resource surveying, experimental and exploratory fishing, location of new fishing grounds

One of the four parts of the MARMAP program is Resource Surveys (others are Fishery Engineering, Fishery Oceanography, and Fishery Analysis), which uses NOAA ships plus chartered vessels to sample the abundance of eggs, larval, juvenile and adult stages fish and shellfish by area and by season. For example, relative to resource surveys, cruises were made by the research vessels Albatross IV and Delaware II off the northeastern U.S. dealing with sea scallops, ocean quahogs, and surf clams.

Off the southeastern coast, resource assessment surveys were made in U.S. continental shelf waters from Cape Hatteras to Florida under contract with the State of South Carolina and the RV Oregon II made surveys of Navassa Island, Navidad-Silver Bank, Puerto Rico, and the Virgin Islands.

In the Bering Sea, surveys of king crab, Tanner crab, and groundfish were made by NOAA vessels and chartered trawlers.

At the Southwest Fisheries Center, an acoustic resonance frequency sonar technique was developed to determine the size of individual pelagic fish in schools which provides a method to determine recruitment into a fishery by rapidly counting the prerecruits. And following the formal signing of the Tripartite Cooperative Agreement for the Survey and Assessment of the Northwestern Hawaiian Islands in 1978 by the Fish and Wildlife Service, NMFS, and the State of Hawaii, a projected 5-year cooperative program to assess the living resources of the Northwestern Hawaiian Islands was initiated.

3.2 Fisheries biology (including methodology and techniques) studies on age determination, tagging, population dynamics

Biologists at the Southwest Fisheries Center developed a technique of great significance when they showed that fish can be aged by counting the daily growth rings on their otoliths. Following publication of the details of this technique, the methodology has been adopted by other NMFS biologists and by biologists throughout the world.

In a major mark-and-recapture experiment, the Southeast Fisheries Center released over 9,000 tagged shrimp in an area from Brownsville, Texas to Tampico, Mexico. More than 6,000 of the tagged shrimp have been recaptured and the data are being analyzed to obtain reliable estimates of growth and mortality and a delineation of subpopulations in the brown shrimp resource.

3.3 Fisheries oceanographic studies

Procedures were developed at the Southwest Fisheries Center to use surface maritime data to define the effects of the atmosphere on the ocean environment on smaller space scales than heretofore possible. The procedures have enabled the delineation of critical environmental processes on scales approaching that which may actually affect fish stocks. As an example, a striking relation has been found between spawning habits of commercially important fishes in the California Current and patterns of ocean surface drift. Spawning activities tended to occur at times and locations of minimal offshore transport.

3.4 Management, laws and regulations, control of pollution

United States fisheries in the fishery conservation zone (FCZ) continued to be managed under the Fishery Conservation and Management Act of 1976. Improved organizational and operational experience by the Regional Fishery Management Councils allowed progress on a considerable number of fishery management plans (FMP) and at the end of 1978, seven FMPs were in effect.

4. ACQUACULTURE (FRESHWATER AND OTHER)

4.1 Feeding, feedstuff

The food of larval mollusks are various species of microalgae. Experiments conducted at the Northeast Fisheries Center included the use of a new technique, using epifluorescence microscopy, to determine which microalgal species are ingested and digested by larval American oysters. Also, studies were carried out to determine the acute and chronic tolerances of several microalgal species to heavy metals such as zinc and cadmium.

At the Southeast Fisheries Center improvements were made in techniques to culture rotifers, which are the primary food of larval fishes like redfish, Sciaenops ocellata, and black drum, Pogonias chromis. Research also continued on the nutritional requirements of the Malaysian prawn, Macrobrachium rosenbergii. Studies indicated that neither animal nor plant sterol additions to the diet produced any better growth rate than a diet containing 32 percent menhaden fish meal. Preliminary studies on the effect of dietary fiber on Malaysian prawn revealed a beneficial effect on their growth brought about by an increase in the fiber level in their diet.

5. INFRASTRUCTURE

The policy engendered by NMFS is to foster the development of all sectors of the U.S. fishing industry--fishermen in the FCZ, in the Great Lakes, U.S. flag distant water fleets, and U.S. processors and distributors--through a program involving:

- 1) Increasing foreign markets access through negotiations and better information on market conditions and trade opportunities.
- 2) Facilitating industry access to private venture capital for vessels, processing plants, and support facilities.
- 3) Satisfying the need of the major fishing industry in some regions for publicly financed infrastructure such as ports and harbors.
- 4) Adapting existing technology and disseminating technological information to allow modernization and improvement of industry capital facilities.

6. UTILIZATION

6.1 Improvements in fresh fish handling and distribution, ice supply

Interim recommendations for handling and processing hake were provided to fishermen and processors in the developing Pacific coast hake fishery. Studies on the causes of mushiness in fresh and cooked hake documented the role of protozoans and postmortem enzyme levels in the flesh and also, the potential means of inhibiting the enzyme in raw and processed fish.

6.2 Product development, new processing methods and equipment

A commercial processor prepared excellent minced blocks by successfully using a modified heading and cleaning machine to remove blood and belly lining from silver hake. Also, by comparison with organoleptic evaluation and chemical and microbiological tests, an English instrument to measure fish deterioration was evaluated for precision and reliability on Atlantic cod, haddock, silver hake, and sand lance.

7. COOPERATIVES AND ENTERPRISES

7.1 Cooperatives

NMFS has a program to provide fishermen and other interested parties with information on organizing and operating fishery cooperatives. In response to complaints, fishery cooperatives are investigated to determine if they are in compliance with the provisions of the Fishery Cooperative Marketing Act of 1934, and are not monopolizing or restraining trade in interstate or foreign commerce such that it unduly increases the price of any aquatic product by the cooperatives.

8. FINANCING THE INDUSTRY

The government provides aid to the industry in various ways. Financial services are provided to the fishing industry under five programs. These are the Fishing Vessel Obligation Guarantee, the Fishing Vessel Capital Construction Fund, the Fishermen's Guaranty Fund, the Fishing Vessel and Gear Damage Compensation Fund, and the Fishermen's Contingency Fund.

